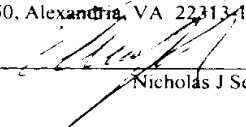


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Date of Signature and Deposit: June 18, 2003


Nicholas J. Seay



PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: James A. Thomson

Serial No.: 09/982,637

Filed: 10/18/2001

For: PRIMATE EMBRYONIC STEM CELLS

Date: June 18, 2003

Group Art Unit: 1632

Examiner: Joseph T. Woitach

Docket No.: 960296.97877

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RESPONSE

Commissioner for Patents
P O Box 1450
Alexandria, VA 22313-1450

Dear Sir:

In response to the Office Action mailed April 18, 2003, please amend Claim 12, withdraw Claims 14-19, and add new Claim 20 as follows:

12. (Currently Amended) A preparation of ~~pluripotent~~ human embryonic stem cells comprising cells which (i) will proliferate *in vitro* culture for over one year, (ii) maintain a karyotype in which the chromosomes are euploid through prolonged culture, (iii) maintain the potential to differentiate to derivatives of endoderm, mesoderm, and ectoderm tissues throughout the culture, and (iv) are inhibited from differentiation when cultured on a fibroblast feeder layer.

13. (Original) The preparation of claim 12, wherein the stem cells will spontaneously differentiate to trophoblast and produce chorionic gonadotropin when cultured to high density.